

AIR QUALITY STUDY

MID COUNTY PARKWAY

PM_{2.5} AND PM₁₀ ANALYSES

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TABLE OF CONTENTS

| | |
|---|----|
| INTRODUCTION | 1 |
| PROJECT LOCATION AND DESCRIPTION | 1 |
| PURPOSE AND NEED | 1 |
| PROJECT ALTERNATIVES | 3 |
| PM _{2.5} AND PM ₁₀ HOT-SPOT METHODOLOGY | 26 |
| PM _{2.5} AND PM ₁₀ HOT-SPOT ANALYSIS | 27 |
| CONCLUSION | 39 |
| REFERENCES | 39 |

FIGURES AND TABLES

FIGURES

| | |
|---|----|
| Figure 1.1: Project Vicinity and Study Area | 2 |
| Figure 1.2a: Study Area Segments | 4 |
| Figure 1.2b: Study Area Segments | 5 |
| Figure 1.3a: Alternative 4 | 12 |
| Figure 1.3b: Alternative 4 | 13 |
| Figure 1.4a: Alternative 5 | 15 |
| Figure 1.4b: Alternative 5 | 16 |
| Figure 1.5a: Alternative 6 | 18 |
| Figure 1.5b: Alternative 6 | 19 |
| Figure 1.6a: Alternative 7 | 21 |
| Figure 1.6b: Alternative 7 | 22 |
| Figure 1.7a: Alternative 9 | 23 |
| Figure 1.7b: Alternative 9 | 24 |

TABLES

| | |
|---|----|
| Table A: Mid-County Parkway Segments Representing Each Build Alternative | 10 |
| Table B: Ambient PM _{2.5} Monitoring Data (µg/m ³) | 29 |
| Table C: Ambient PM ₁₀ Monitoring Data (µg/m ³) | 30 |
| Table D: Existing (2005) and No Build (2035) Average Daily Traffic Volumes (Truck Average Daily Volumes) | 31 |
| Table E: 2035 Project Alternative Average Daily Traffic Volumes (Truck Average Daily Volumes) | 32 |
| Table F: 2035 No Project/No Action Intersection Levels of Service | 33 |
| Table G: 2035 No Project/County General Plan Intersection Levels of Service | 33 |
| Table H: 2035 Alternative 4 Intersection Levels of Service | 34 |
| Table I: 2035 Alternative 5 Intersection Levels of Service | 35 |
| Table J: 2035 Alternative 6 Intersection Levels of Service | 36 |
| Table K: 2035 Alternative 7 Intersection Levels of Service | 37 |
| Table L: 2035 Alternative 9 Intersection Levels of Service | 38 |

INTRODUCTION

LSA Associates, Inc. (LSA) prepared this Air Quality Technical Addendum for the Mid County Parkway (MCP) project in response to the United States Environmental Protection Agency (EPA) releasing new PM_{2.5}¹ and PM₁₀² hot-spot analysis requirements in its March 10, 2006, final transportation conformity rule (71 FR 12468) (Final Rule). The 2006 Final Rule supersedes the Federal Highway Administration's (FHWA) September 12, 2001, "Guidance for Qualitative Project-Level Hotspot Analysis in PM₁₀ Nonattainment and Maintenance Areas." This technical addendum was conducted following the procedures and methodology provided in the "Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas" (EPA/FHWA Guidance) (EPA, 2006a) developed by the EPA and the FHWA.

This PM_{2.5} and PM₁₀ analysis addresses the construction of the MCP project, including the following components identified in the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP): Project ID: RIV031218, CETAP – Mid County Parkway Corridor: complete environmental work/route alternatives (Phases 1 and 2) from State Route 79 (SR-79) in the east through Lake Mathews and Mead Valley to Interstate 15 (I-15).

PROJECT LOCATION AND DESCRIPTION

The Riverside County Transportation Commission (RCTC), in cooperation with the California Department of Transportation (Caltrans) District 8, the County of Riverside, the City of San Jacinto, the City of Perris, and the City of Corona, proposes to construct the Mid County Parkway (MCP), a new highway project in Riverside County, California. The project area is in western Riverside County, primarily along or parallel to the existing Cajalco Road and the Ramona Expressway. Figure 1.1 depicts the MCP study area and the regional location of the project. The MCP study area is approximately 51 kilometers (km) (32 miles [mi]) long and ranges from 1.7 to 8.3 km (1 to 5 mi) wide.

The MCP will serve as a major east-west connection in western Riverside County and will also provide for regional movement to eastern Riverside County, Los Angeles County, and Orange County. The proposed action would adopt an MCP alignment and construct a major, limited-access transportation parkway to meet current and projected 2035 travel demand from Interstate 15 (I-15) on the west to State Route 79 (SR-79) on the east.

PURPOSE AND NEED

The purpose of the proposed action is to provide a transportation parkway that will effectively and efficiently accommodate regional east-west movement of people and goods between and through San Jacinto, Perris, and Corona. More specifically, the selected alternative will:

- Provide increased capacity to support the forecast travel demand for the 2035 design year
- Provide a limited access parkway

¹ Particulate matter less than 2.5 microns in diameter.

² Particulate matter less than 10 microns in diameter.

Figure 1.1: Project Vicinity and Study Area

- Provide roadway geometrics to meet State highway design standards
- Accommodate the Surface Transportation Assistance Act (STAA) National Network for oversized trucks
- Provide a parkway that is compatible with a future multimodal transportation system

The Mid County Parkway is located in an area of western Riverside County that is undergoing substantial population and employment growth. The population in Riverside County overall is expected to double between 2000 and 2030 from 1.5 million to 3.1 million.¹ The population in western Riverside County is expected to increase by over one million people between 2000 and 2025, an increase of more than 85 percent. Growth in employment is expected to occur at an even higher rate, with an increase of over 115 percent in the number of jobs.² Although currently funded transportation improvements will address some of the projected future demand, additional transportation improvements are needed to provide for the efficient movement of goods and people in the future.

Traditionally, western Riverside County has served as a population center of individuals commuting to Orange and Los Angeles Counties, resulting in high levels of east-west travel demand. In addition to the rapid population growth in these communities, land planning and economic projections indicate that the Perris/Moreno Valley/March Air Reserve Base area will serve as a major distribution hub for goods in the Inland Empire.³ This employment center will result in increased travel demand by commuters, as well as by trucks carrying goods in and out of the area.

PROJECT ALTERNATIVES

Segment Descriptions

The MCP alternatives are composed of various segments, (Figures 1.2a and 1.2b). An alternative is one possible east/west route between I-15 on the west and SR-79 on the east. Many of the alternatives share common segments. To organize data collection and analysis for the MCP Alternatives and to reduce redundancy resulting from the many common segments, data were collected and tabulated for the project technical reports by segment. There are 17 segments and design variations in the current build alternatives, all of which are listed and summarized below. Some of the segments are described as design variations although they are used to replace a segment or a portion of a segment. A description of the beginning and end points is provided below for each of the 17 segments. Most segments run in an east-west direction, although a few run north-south. Distances are approximate.

Temescal Wash Area with Collector Distributor (CD) Roads (TWS-C). The Temescal Wash Area with Collector Distributor (CD) Roads (TWS-C) Segment begins at the western terminus of the MCP and ends 250 meters (m) (840 feet [ft]) east of the Temescal Canyon Road/Cajalco Road intersection.

¹ Source: 2004 Regional Transportation Plan, Southern California Association of Governments.

² Source: 2004 Regional Transportation Plan, Southern California Association of Governments.

³ For example, the March Air Reserve Base Land Use Plan in the Riverside County General Plan (adopted 2003) provides for 9.7 million square feet of industrial build out capacity and 5.1 million square feet of commercial build out capacity.

Figure 1.2a: Study Area Segments

Figure 1.2b: Study Area Segments

This segment includes portions of I-15 north and south of the existing I-15 interchange at Cajalco Road and east and west of I-15 in the vicinity of existing Cajalco Road. This segment extends approximately 3,140 m (10,300 ft) south of the existing Cajalco Road, approximately 3,500 m (11,600 ft) north of existing Cajalco Road, approximately 2,150 m (7,050 ft) west of I-15, and approximately 975 m (3,200 ft) east of I-15. The alignment remains south of existing Cajalco Road to 250 m (840 ft) east of the Temescal Canyon Road/Cajalco Road intersection. The CD roads will extend from Weirick Road to Ontario Avenue. The MCP mainline crosses over the I-15. Circulation improvements include the addition of through lanes for capacity enhancement at both the northbound and southbound ramp interchanges for Ontario Avenue/I-15, the widening of Ontario Avenue between the I-15 on and off-ramps, and the addition of one lane to both the northbound on- and off-ramps. In addition, the Cajalco Road/I-15 interchange will undergo an operational improvement to replace the existing two-lane overcrossing with a new six-lane overcrossing. The improvement will close a gap between four- and six-lane sections of Cajalco Road on either side of the parkway and specifically widen Cajalco Road from two to four lanes from Temescal Canyon Wash to Bedford Canyon Wash and widen the ramps from one to two lanes.

Lake Mathews South (LMS). The Lake Mathews South (LMS) Segment begins at the eastern terminus of the TWS-C Segment, south of existing Cajalco Road at the Temescal Canyon Road/Cajalco Road intersection, and proceeds east through predominantly vacant land (primarily habitat reserve lands owned by either the Riverside County Habitat Conservation Agency [RCHCA] or the Metropolitan Water District of Southern California [Metropolitan]) remaining south of existing Cajalco Road. It connects with the Mead Valley (MV) Segment approximately 789 m (2,590 ft) east of El Sobrante Road. A two-way frontage road is proposed directly adjacent to the south side of the new parkway to capture local traffic approaching from the south. This frontage road starts west of Lake Mathews Drive and ends at the MCP/El Sobrante Road interchange.

Lake Mathews North General Plan (LMN-GP). The Riverside County General Plan Circulation Element proposes an urban arterial¹ north of Lake Mathews. The Lake Mathews North General Plan (LMN-GP) Segment proceeds from the Temescal Canyon Road/Cajalco Road intersection along a new alignment north to where it connects to El Sobrante Road at its intersection with La Sierra Avenue. From La Sierra Avenue, the LMN-GP Segment follows the existing alignment of El Sobrante Road north of Lake Mathews, connecting to the MV Segment 789 m (2,590 ft) east of the El Sobrante Road and Cajalco Road intersection. This segment is a four-lane urban arterial with local intersections throughout its entire length. Changes to existing conditions within this segment include realignment of a portion of existing Cajalco Road from 1,038 m (3,407 ft) west of Mockingbird Canyon to 682 m (2,240 ft) east of Mockingbird Canyon.

¹ An urban arterial is a highway primarily for through-traffic where anticipated traffic volumes exceed four-lane capacity. Access from other streets or highways shall be limited to approximately one-quarter mile intervals. Source: County of Riverside General Plan, Circulation Element.

Lake Mathews South General Plan (LMS-GP). The Riverside County General Plan Circulation Element proposed to realign existing Cajalco Road as a four-lane access-controlled expressway¹ with a 40 m (128 ft) right-of-way. The Lake Mathews South General Plan (LMS-GP) Segment proceeds from the Temescal Canyon Road/Cajalco Road intersection to 789 m (2,590 ft) east of El Sobrante Road at the western terminus of the MV Segment. The segment climbs the hills on an alignment that initially parallels existing Cajalco Road and then traverses the hills to the south of Cajalco Road to minimize the grade changes on the proposed road. A two-way frontage road is proposed directly adjacent to the south side of the new parkway to capture local traffic approaching from the south. This frontage road starts west of Lake Mathews Drive and ends at the El Sobrante Road interchange.

Mead Valley (MV). The Mead Valley (MV) Segment crosses Mead Valley from the terminus of the LMS Segment, 789 m (2,590 ft) east of El Sobrante Road, and extends to 696 m (2,285 ft) east of Day Street. This segment is aligned parallel to and just north of existing Cajalco Road.

Far South (FS). The Far South (FS) Segment is applicable only to Alternative 9. It begins at the eastern terminus of the TWS-C Segment, south of existing Cajalco Road, at the Temescal Canyon Road/Cajalco Road intersection and proceeds east through predominantly vacant land (primarily habitat reserve land owned by either the RCHCA or Metropolitan) remaining south of existing Cajalco Road, approximately 3.2 km (2.0 mi) south of existing Cajalco Road, and extends to the Connector Perris 3 (C3) Segment 125 m (410 ft) east of Haines Street. The FS Segment traverses a portion of the Gavilan Hills.

Connector Perris 1 (C1). The Connector Perris 1 (C1) Segment connects the MV Segment to the Rider Street (RD) Segment. The C1 Segment begins 790 m (2,600 ft) east of Day Street and ends at Patterson Avenue, a distance of approximately 1.6 km (1.0 mi).

Connector Perris 3 (C3). The Connector Perris 3 (C3) Segment begins 125 m (410 ft) east of Haines Street at the east terminus of the FS Segment and extends east approximately 272 m (895 ft) west of Patterson Avenue to the west edge of the Placentia Avenue/Perris Boulevard (PP-D) or Elevated Grade Design Variation (PP-E) Segments.

Perris Drain (PD). The Perris Drain (PD) Segment provides a connection between the Depressed Grade MV and San Jacinto (SJ) Segments along the Perris Drain. This segment begins 696 m (2,285 ft) east of Day Street on the west and ends at 87 m (291 ft) west of Dawson Street. In this segment, approximately 1,600 m (5,250 ft) of the MCP will be elevated approximately 4.5–7.6 m (15–25 ft) above grade on a viaduct. This segment also includes an MCP/I-215 interchange extending along I-215, approximately 3,200 m (11,500 ft) north and 3,100 m (10,250 ft) south of the existing Ramona Expressway/I-215 interchange. The MCP mainline crosses over the I-215.

¹ An expressway is a multi-modal highway corridor for through traffic to which access from abutting property is restricted. Intersections with other streets or highways are limited to approximately one-half mile intervals. Source: County of Riverside General Plan, Circulation Element.

Rider Street (RD). The Rider Street Segment connects the C1 Segment with the SJ Segment. It extends from 21 m (71 ft) east of Patterson Avenue on the west to 87 m (291 ft) west of Dawson Street. This segment also includes an MCP/I-215 interchange extending along I-215 2,530 m (8,300 ft) north and 1,845 m (6,050 ft) south of Rider Street. The MCP mainline crosses over the I-215.

Placentia Avenue/Perris Boulevard Depressed Grade (PP-D). The PP-D Segment follows Placentia Avenue at a point approximately 272 m (895 ft) west of Patterson Avenue, which is the eastern terminus of the C3 Segment, and extends east to 87 m (291 ft) west of Dawson Street. This segment includes an MCP/I-215 interchange, extending along I-215, 1,585 m (5,200 ft) north and 1,860 m (6,100 ft) south of Placentia Avenue. For this segment, the MCP mainline crosses over the I-215. The road is depressed below grade approximately 9.0 m (29.5 ft) from Barrett Avenue to Wilson Avenue. This segment applies only to Alternative 9.

San Jacinto (SJ). The San Jacinto (SJ) Segment extends along existing Ramona Expressway from the eastern terminus of the PD, RD, and PP-D Segments to 1.0 km (0.6 mi) west of Warren Road on the east. The SJ Segment terminates at the San Jacinto North (SJN) and San Jacinto South (SJS) Segments and measures a total distance of approximately 12.3 km (7.63 mi).

San Jacinto South (SJS). The SJS Segment extends from the eastern terminus of the SJ Segment 1.32 km (0.82 mi) west of Warren Road east to SR-79. The connection to SR-79 would be at the new alignment of SR-79 proposed under the SR-79 realignment project. It follows an alignment approximately 300 m (990 ft) south of the existing Ramona Expressway adjacent to the Colorado River Aqueduct. This segment also extends approximately 1,080 m (3,550 ft) north of the Ramona Expressway along SR-79 and approximately 2,560 m (8,400 ft) south of the Ramona Expressway along SR-79.

Temescal Wash Area Design Variation (TWS). This is a design variation for the TWS-C Segment that removes partial access from I-15 to El Cerrito Road. Changes to existing conditions included within this segment include closing the existing southbound on-ramp and northbound off-ramp at El Cerrito Road that connect to I-15. The El Cerrito Road overcrossing will remain open, connecting local streets from one side of I-15 to the other side. Under this design variation, the CD roads will extend from Weirick Road to just north of Cajalco Road. The MCP mainline crosses over the I-15. Other circulation improvements include capacity enhancement for Ontario Avenue and the Ontario Avenue/I-15 interchange, as well as a modified I-15 interchange at Cajalco Road. This design variation applies to all the MCP Build Alternatives.

Connector Perris 2 Design Variation (C2). The Connector Perris 2 (C2) Segment begins at the east terminus of the FS Segment, 125 m (410 ft) east of Haines Street. This segment veers northward at Anderson Street, follows north of Rider Street, and connects to the RD Segment 21 m (74 ft) east of Patterson Avenue. The C2 and RD Segments form the Rider Street Design Variation, which applies only to Alternative 9.

Placentia Avenue/Perris Boulevard Elevated Grade Design Variation (PP-E). PP-E Segment is an elevated design variation of the PP-D Segment. The PP-E Segment follows Placentia Avenue at the eastern terminus of the C3 Segment at a point approximately 272 m (895 ft) west of Patterson Avenue and extends east to 87 m (291 ft) west of Dawson Street. This segment includes an MCP/I-215 interchange, extending along I-215, 1,585 m (5,200 ft) north and 1,860 m (6,100 ft) south of Placentia Avenue. The MCP mainline crosses over the I-215. For this design variation, the road is elevated above grade approximately 8.0 m (26.25 ft) from Barrett Avenue to Wilson Avenue. This design variation applies only to Alternative 9.

San Jacinto North Design Variation (SJN). The SJN Segment extends from the eastern terminus of the SJ Segment 1.32 km (0.82 mi) west of Warren Road and east to SR-79, following an alignment approximately 300 m (990 ft) north of the existing Ramona Expressway. The connection to SR-79 would be at the new alignment of SR-79 proposed under the SR-79 realignment project. This segment also extends approximately 2,160 m (7,090 ft) north of the Ramona Expressway along SR-79 and 1,520 m (4,990 ft) south of the Ramona Expressway along SR-79. The SJN Segment is a design variation of the SJS Segment for all the MCP Build Alternatives.

Alternative Descriptions

Descriptions of the two No Project/No Action Alternatives (Alternatives 1A and 1B) and the five Build Alternatives (Alternatives 4, 5, 6, 7, and 9) that are evaluated in this technical study are provided below. The alignments of the MCP Alternatives are shown on detailed figures in this section. Table A lists the MCP segments and identifies which segments apply to each of the MCP Build Alternatives.

Alternative 1A: No Project/No Action—Existing Ground Conditions. Alternative 1A represents 2035 traffic on the planned street network except for future improvements to Cajalco Road and the Ramona Expressway, which would remain as they exist today. Construction of an MCP project would not be implemented with the No Project/No Action Alternative 1A. The future east-west traffic described in the study area would be served by existing Cajalco Road between I-15 and I-215 and by the existing Ramona Expressway between I-215 and SR-79. This alternative assumes 2035 land use conditions and implementation of planned improvements to the regional and local circulation system, as accounted for in the adopted Riverside County General Plan (2003), RCTC's Measure A program, and other adopted plans and policies.

Alternative 1B: No Project/No Action—General Plan Circulation Element Conditions. Alternative 1B represents 2035 traffic levels on the planned street network, according to the Circulation Element of the Riverside County General Plan. Construction of an MCP project would not be implemented with No Project/No Action Alternative 1B. This alternative is the same as Alternative 1A but includes implementation of improvement to Cajalco Road and the Ramona Expressway consistent with the Riverside County General Plan Circulation Element.

Table A: Mid-County Parkway Segments Representing Each Build Alternative

| Alternative Number | Alternative Name | MCP Segments | | | | | | | | | | | | | | | | |
|--------------------|---|--------------|-----|-----|--------|--------|-----|-----|-----|----|-----|-----|-----|------|------|-----|-----|-----|
| | | TWS-C | TWS | LMS | LMN-GP | LMS-GP | MV | FS | C1 | C2 | C3 | PD | RD | PP-D | PP-E | SJ | SJN | SJS |
| 4 | South of Lake Mathews/North Perris (Drain) | DV | Yes | Yes | No | No | Yes | No | No | No | No | Yes | No | No | No | Yes | DV | Yes |
| 5 | South of Lake Mathews/South Perris (at Rider Street) | DV | Yes | Yes | No | No | Yes | No | Yes | No | No | No | Yes | No | No | Yes | DV | Yes |
| 6 | General Plan North and South of Lake Mathews/North Perris (Drain) | DV | Yes | No | Yes | Yes | Yes | No | No | No | No | Yes | No | No | No | Yes | DV | Yes |
| 7 | General Plan North and South of Lake Mathews/South Perris (at Rider Street) | DV | Yes | No | Yes | Yes | Yes | No | Yes | No | No | No | Yes | No | No | Yes | DV | Yes |
| 9 | Far South/Placentia Avenue | DV | Yes | No | No | No | No | Yes | No | DV | Yes | No | DV | Yes | DV | Yes | DV | Yes |

Source: Jacobs, June 2006.

Note: MCP Segment Abbreviations

TWS = Temescal Wash Area (Design Variation)
TWS-C = Temescal Wash Area with CD Roads
LMS = Lake Mathews South Segment

LMN-GP = Lake Mathews North General Plan
LMS-GP = Lake Mathews South General Plan
MV = Mead Valley
FS = Far South
C1 = Connector Perris 1

C2 = Connector Perris 2 (Design Variation)
C3 = Connector Perris 3
PD = Perris Drain
RD = Rider Street

PP-D = Placentia Avenue/Perris Boulevard Depressed
PP-E = Placentia Avenue/Perris Boulevard Elevated Grade (Design Variation)
SJ = San Jacinto
SJN = San Jacinto North
SJS = San Jacinto South
DV = Design Variation

Alternative 4: South of Lake Mathews/North Perris (Drain). Alternative 4 proposes a six- to eight-lane controlled access parkway with six mixed-flow lanes for most of its length, and up to eight mixed-flow lanes near the I-215 interchange. Alternative 4 is located south of Lake Mathews and follows a northern alignment through the City of Perris as shown in Figures 1.3a and 1.3b. The Alternative 4 alignment is south of existing Cajalco Road west of Lake Mathews Drive and north of Ramona Expressway from I-215 to east of Redlands Avenue. The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the MCP project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network. Alternative 4 extends from the Temescal Wash Area with CD Roads (TWS-C) Segment to the San Jacinto South (SJS) Segment and includes the Lake Mathews South Segment (LMS); Mead Valley (MV), Perris Drain (PD), and the San Jacinto (SJ) and San Jacinto South (SJS) Segments.

System interchanges (a freeway-to-freeway type interchange) are proposed for all the MCP Build Alternatives at I-15, I-215, and SR-79. The MCP/I-15 interchange is proposed as four levels and would be approximately 30.5 to 38.1 m (100 to 125 ft) in height. The proposed four-level design will not preclude possible future high-occupancy vehicle (HOV) direct connectors at the system interchange at I-15. A collector-distributor road is proposed to run north-south to provide local access to I-15 from local interchanges at Weirick Road, Cajalco Road, El Cerrito Road, and Ontario Avenue.

Similarly, the MCP/I-215 interchange is proposed as a three-level interchange that will not preclude possible future HOV direct connectors. At the highest point, the MCP/I-215 interchange would be approximately 23 to 30 m (75 to 100 ft) above ground level. The MCP mainline crosses over the I-15 and I-215 at the respective system interchanges. A collector distributor road is proposed to run north-south to provide local access to I-215 from the local interchanges at Placentia Avenue, Ramona Expressway, and Oleander Avenue. This alternative includes a realignment of the I-215 mainline to east of the existing location, from Placentia Avenue to just north of Strata Road. The existing railroad tracks west of I-215 are proposed to remain in place.

A three-level interchange is proposed at SR-79 at an approximate height of 15 m (50 ft). The MCP connection to SR-79 will be made at the proposed realignment of SR-79, south of Ramona Expressway. (SR-79 is proposed to be realigned and widened to a six-lane controlled access highway between Ramona Expressway and Domenigoni Parkway and is currently undergoing separate environmental review.) The MCP provides direct connectors to northbound and southbound SR-79, as well a six lane easterly extension that terminates at a proposed signalized intersection at Ramona Expressway.

Service interchanges (interchanges that connect a controlled-access parkway to local arterials) for Alternative 4 are proposed at a location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referred to as the Estelle Mountain interchange), at Lake Mathews Drive, El Sobrante Road, Wood Road, Alexander Street, Clark Street, Perris Boulevard, Evans Road, Ramona Expressway, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road.

Figure 1.3a: Alternative 4

Figure 1.3b: Alternative 4

Alternative 4 includes two Design Variations at the western and eastern termini of the alternative that use (1) a smaller system of collector-distributor roads at the MCP/I-15 interchange, which includes the removal of the two existing on- and off-ramps at El Cerrito Road, and (2) the SJN segment instead of the SJS segment to connect with SR-79.

Alternative 5: South of Lake Mathews/South Perris (at Rider Street). Alternative 5 is a six- to eight-lane controlled-access parkway with six mixed-flow lanes for most of its length and up to eight mixed-flow lanes near the I-215 interchange. Alternative 5 is south of Lake Mathews and follows a southern alignment through Perris along Rider Street as shown in Figures 1.4a and 1.4b). The Alternative 5 alignment is south of existing Cajalco Road west of Lake Mathews Drive and south of the Ramona Expressway from I-215 to just west of Antelope Road. The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the MCP project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network. Like Alternative 4, Alternative 5 extends from the TWS-C Segment on the west to the SJS Segment on the east. Alternative 5 also coincides with Alternative 4 for the LMS and MV Segments. Alternative 5 differs from Alternative 4 in the Perris segments. Where Alternative 4 includes the PD Segment between the MV and SJ Segments, Alternative 5 extends east from the MV Segment via the C1 and RD Segments to connect to the SJ Segment.

System interchanges proposed for Alternative 5 are the same as for Alternative 4, with connections at I-15, I-215, and SR-79. The MCP mainline crosses over the I-15 and the I-215 at the respective interchanges. The I-215 system interchange differs from that in Alternative 4 as it connects the MCP to I-215 near Rider Street. As with Alternative 4, it is proposed as a three-level interchange that will not preclude possible future HOV direct connectors. The interchange will be approximately 23 to 30 m (75 to 100 ft) above ground level. A collector-distributor road is proposed to run north-south to provide local access to I-215 from the I-215 service interchanges at Placentia Avenue, Ramona Expressway, and Oleander Avenue. This alternative includes a realignment of the I-215 mainline to east of the existing location, from Placentia Avenue to Ramona Expressway. The existing railroad tracks west of I-215 are proposed to remain in place.

Service interchanges for Alternative 5 are proposed at a location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referred to as the Estelle Mountain interchange), at Lake Mathews Drive, El Sobrante Road, Wood Road, Alexander Street, Clark Street, Perris Boulevard, Evans Road, Ramona Expressway, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road.

Alternative 5 includes two design variations at the western and eastern termini of the alternative that use (1) a smaller system of collector-distributor roads at the MCP/I-15 interchange instead of the proposed MCP/I-15 interchange, which includes the removal of two existing on- and off-ramps at El Cerrito Road, and (2) the SJN Segment instead of the SJS Segment to connect with SR-79.

Figure 1.4a: Alternative 5

Figure 1.4b: Alternative 5

Alternative 6: General Plan North and South of Lake Mathews/North Perris (Drain).

Alternative 6 involves the implementation of General Plan Circulation Element improvements between I-15 and El Sobrante Road and a new six- to eight-lane controlled access parkway east of El Sobrante Road to SR-79 as shown in Figures 1.5a and 1.5b. Alternative 6 is the same as Alternative 4 (described above) east of El Sobrante Road and is located north of Ramona Expressway from I-215 to east of Perris Boulevard. The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the MCP project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network. West of El Sobrante Road to I-15, the project includes a four-lane urban arterial north of Lake Mathews¹ and a four-lane access-controlled expressway south of Lake Mathews. These proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan Circulation Element and generally follow the alignments shown in the General Plan. The parkway south of Lake Mathews would be a controlled access expressway that ties into the same system interchange configuration at I-15 as the other MCP Build Alternatives.

System interchanges proposed for Alternative 6 are the same as for Alternative 4, with connections at I-15, I-215, and SR-79. Refer to description of those system interchanges for Alternative 4 above. The Alternative 4 MCP mainline crosses over the I-15 and I-215 at the respective interchanges provided for earlier. Service interchanges for this Alternative are at the same locations as for Alternative 4, even though the location of the alignment south of Lake Mathews is somewhat different from that of Alternative 4. These interchanges include Estelle Mountain, Lake Mathews Drive, El Sobrante Road, Wood Road, Alexander Street, Clark Street, Perris Boulevard, Evans Road, Ramona Expressway, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road. In addition, the General Plan arterial north of Lake Mathews included in Alternative 6 would modify the existing intersection at La Sierra Avenue and result in a new arterial road extension from La Sierra Avenue in a southwesterly direction to connect with Cajalco Road.

The segments for the General Plan north and south of the Lake Mathews area include the TWS-C, LMN-GP, and LMS-GP Segments. The LMS-GP Segment provides a four-lane access-controlled expressway that connects into I-15. The LMN-GP Segment provides a four-lane arterial that connects into Cajalco Road. The segments from the MV Segment to the SJS Segment are the same as Alternative 4.

Alternative 6 includes two design variations at the western and eastern termini of the alternative that use (1) a smaller system of collector-distributor roads at the MCP/I-15 interchange instead of the proposed MCP/I-15 interchange, which includes the removal of two of the existing on- and off-ramps at El Cerrito Road, and (2) the SJN Segment instead of the SJS Segment to connect with SR-79.

¹ The General Plan provides for up to six lanes in this location; however, traffic forecast modeling indicates that four lanes will meet projected demand.

Figure 1.5a: Alternative 6

Figure 1.5b: Alternative 6

Alternative 7: General Plan North and South of Lake Mathews/South Perris (at Rider Street).

Alternative 7 proposes the implementation of General Plan Circulation Element improvements between I-15 and El Sobrante Road and a new six- to eight-lane controlled access parkway east of El Sobrante Road to SR-79 (as shown on Figures 1.6a and 1.6b). Alternative 7 is the same as Alternative 5 (described above) east of El Sobrante Road and follows a southerly alignment through Perris. The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network. West of El Sobrante Road to I-15, the Riverside County General Plan includes a four-lane urban arterial north of Lake Mathews¹ and a four-lane access-controlled expressway south of Lake Mathews. These proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan Circulation Element and are the same as described above for Alternative 6.

System interchanges proposed for Alternative 7 are the same as Alternative 5 with connections at I-15, I-215, and SR-79. Refer to the description of those systems interchanges provided above for Alternative 5. The MCP mainline crosses over the I-15 and I-215 at the respective interchanges. Service interchanges for this Alternative are at the same locations as for Alternative 5, even though the location of the alignment south of Lake Mathews is somewhat different from that of Alternative 5. These interchanges include Estelle Mountain, Lake Mathews Drive, El Sobrante Road, Wood Road, Alexander Street, Clark Street, Perris Boulevard, Evans Road, Ramona Expressway, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road. In addition, the General Plan arterial north of Lake Mathews included in Alternative 7 would modify the existing intersection at La Sierra Avenue and result in a new arterial road extension from La Sierra Avenue in a southeasterly direction to connect with Cajalco Road.

The segments for the General Plan north and south of the Lake Mathews area include the TWS-C, LMN-GP, and LMS-GP Segments. The LMS-GP Segment provides a four-lane access-controlled expressway that connects into I-15. The LMN-GP Segment provides a six-lane arterial that connects into Cajalco Road. The segments from the MV to the SJS Segment are the same as for Alternative 5.

Alternative 7 includes two design variations at the western and eastern termini of the alternative that use (1) a smaller system of collector-distributor roads at the MCP/I-15 interchange instead of the proposed MCP/I-15 interchange, which includes the removal of two of the existing on- and off-ramps at El Cerrito Road, and (2) the SJN Segment instead of the SJS Segment to connect with SR-79.

Alternative 9: Far South/Placentia Avenue. Alternative 9 is approximately 3.2 km (2.0 mi) south of Cajalco Road for much of its length but shares the same connection to I-15 as Alternatives 4 and 5 (TWS-C segment). The alignment and proposed interchange locations for Alternative 9 are shown in Figures 1.7a and 1.7b. Alternative 9 is a four- to six-lane controlled-access parkway south of both Lake Mathews and Mead Valley and a six- to eight-lane controlled-access parkway between Old

¹ The General Plan provides for up to six lanes in this location; however, traffic forecast modeling indicates that four lanes will meet projected demand.

Figure 1.6a: Alternative 7

Figure 1.6b: Alternative 7

Figure 1.7a: Alternative 9

Figure 1.7b: Alternative 9

Elsinore Road and I-215 and a six- to eight-lane controlled-access parkway between I-215 and SR-79. Alternative 9 is comprised of the following segments: TWS-C, FS, C3, PP-D, SJ, and SJS.

Alternative 9 is unique compared to the other MCP Build Alternatives for the segments between Lake Mathews Drive and Placentia/Rider Streets. The segments unique to Alternative 9 include the FS, the connector to Placentia Avenue (C3), and the PP-D Segments.

System interchanges are proposed for all the MCP Build Alternatives, including Alternative 9, at I-15, I-215, and SR-79. The system interchanges at I-15 and SR-79 for Alternative 9 are the same as those proposed for Alternatives 4, 5, 6, and 7. The MCP mainline crosses over the I-15 and I-215 at the respective system interchanges. The proposed system interchange at I-215 differs for Alternative 9 from the other MCP Build Alternatives, as it connects MCP to I-215 approximately 45 m (150 ft) south of Placentia Avenue. The system interchange is proposed as a three-level interchange that will not preclude possible future HOV direct connectors. At its highest point, the interchange would be approximately 23–30 m (75–100 ft) high. This alternative does not require a collector-distributor road system at the I-215 interchange, nor does it require any change to the existing railroad tracks west of I-215. There is a service interchange at the realigned Placentia Avenue for the I-215 and a service interchange at Perris Boulevard for access to the MCP. Service interchanges for Alternative 9 are also proposed at a location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referenced as the Estelle Mountain interchange), Lake Mathews Drive, Old Elsinore Road, Evans Road, Ramona Expressway, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road.

Four design variations apply to Alternative 9, as described below.

Design Variations

The following two design variations apply only to Alternative 9:

Rider Street Design Variation (C2 and RD). The Rider Street design variation begins at the eastern terminus of the FS Segment, approximately 125 m (410 ft) east of Haines Street. This design variation includes all the Connector Perris 2 and Rider Street Segments. The combination of the C2 and RD Segments is applicable only as a design variation for Alternative 9. The RD Segment is also part of Alternatives 5 and 7. The RD design variation terminates 87 m (291 ft) west of Dawson Street. This design variation also includes the MCP/I-215 interchange, similar to Alternatives 5 and 7, with it extending along I-215 north and south of Rider Street (see Figures 1.7a and 1.7b).

Placentia Avenue/Perris Boulevard Elevated Grade Design Variation (PP-E). PP-E is an elevated design variation of the PP-D Segment in Alternative 9. This PP-E Segment follows Placentia Avenue at the eastern terminus of the C3 Segment at a point approximately 272 m (895 ft) west of Patterson Avenue and extends east 87 m (291 ft) to Dawson Street. This segment includes an MCP/I-215 interchange, extending along I-215, approximately 1,570 m (5,150 ft) north and 1,870 m (6,100 ft) south of Placentia Avenue. The MCP mainline crosses over the I-215. For this design variation, the road is elevated approximately 8 m (26.25 ft) above grade from Barrett Avenue to Wilson Avenue.

The following design variations apply to all the MCP Build Alternatives:

Temescal Wash Area Design Variation (TWS). This is a design variation for the TWS-C Segment that partially removes access to I-15 from El Cerrito Road. In this design variation, the El Cerrito interchange southbound on-ramp and northbound off-ramps would be closed. A collector-distributor road system is provided from Weirick Road to Cajalco Road, with modifications to the existing Weirick Road, El Cerrito Road, and Ontario Avenue interchanges. A new interchange on I-15 would be constructed at Cajalco Road, just north of the existing Cajalco Road interchange, which would be removed.

San Jacinto North Design Variation (SJN). The SJN segment extends from the eastern terminus of the SJ Segment 1.32 km (0.82 mi) west of Warren Road east to SR-79. It follows an alignment approximately 347.4 m (1,140 ft) north of the existing Ramona Expressway adjacent to the Colorado Aqueduct. This segment also extends approximately 1.48 km (0.92 mi) north of the Ramona Expressway along SR-79 and approximately 1.06 km (0.67 mi) south of the Ramona Expressway along SR-79.

PM_{2.5} AND PM₁₀ HOT-SPOT METHODOLOGY

The new Final Rule establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in PM_{2.5} and PM₁₀ nonattainment and maintenance areas. The proposed project is in the South Coast Air Basin (Basin), which has been designated as a federal nonattainment area for PM_{2.5} and PM₁₀; therefore, a hot-spot analysis is required.

A hot-spot analysis is defined in the Code of Federal Regulations (CFR) (40 CFR 93.101) as an estimation of likely future localized pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. A hot-spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, such as for congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets Clean Air Act (CAA) conformity requirements to support State and local air quality goals with respect to potential localized air quality impacts. When a hot-spot analysis is required, it is included within the project-level conformity determination that is made by the FHWA or the Federal Transit Administration (FTA).

Section 176(c)(1)(B) of the CAA is the statutory criterion that must be met by all projects in nonattainment and maintenance areas that are subject to transportation conformity. Section 176(c)(1)(B) states that federally supported transportation projects must not “cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.”

Ambient Air Quality Standards

PM_{2.5} nonattainment and maintenance areas are required to attain and maintain two ambient air quality standards (AAQS):

- **24-hour Standard:** 35 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Based on 2004–2006 monitored data, the EPA tightened the PM_{2.5} 24-hour standard from 65 to 35 $\mu\text{g}/\text{m}^3$, effective December 2006. New area designations will become effective in early 2010 (EPA, 2006b).
- **Annual Standard:** 15.0 $\mu\text{g}/\text{m}^3$

The current 24-hour standard is based on a three-year average of the 98th percentile of 24-hour PM_{2.5} concentrations. The current annual standard is based on a three-year average of annual mean PM_{2.5} concentrations. A PM_{2.5} hot-spot analysis must consider both standards unless it is determined for a given area in which meeting the controlling standard would ensure that CAA requirements are met for both standards. The interagency consultation process should be used to discuss how the qualitative PM_{2.5} hot-spot analysis meets statutory and regulatory requirements for both PM_{2.5} standards, depending on the factors that are evaluated for a given project.

PM₁₀ nonattainment and maintenance areas are required to attain the following standard:

- **24-hour Standard:** 150 $\mu\text{g}/\text{m}^3$

The 24-hour PM₁₀ standard is attained when the average number of exceedances in the previous three calendar years is less than or equal to 1.0. An exceedance occurs when a 24-hour concentration of 155 $\mu\text{g}/\text{m}^3$ or greater is measured at a site. The annual PM₁₀ standard of 50 $\mu\text{g}/\text{m}^3$ is no longer used for determining the federal attainment status. The interagency consultation process should be used to discuss how the qualitative PM₁₀ hot-spot analysis meets statutory and regulatory requirements for the PM₁₀ standards, depending on the factors that are evaluated for a given project.

To meet statutory requirements, the 2006 Final Rule requires PM_{2.5} and PM₁₀ hot-spot analyses to be performed for Projects of Air Quality Concern (POAQC). The Final Rule states that projects not identified in 40 CFR 93.123(b)(1) as POAQC have met statutory requirements without any further hot-spot analyses (40 CFR 93.116[a]).

PM_{2.5} AND PM₁₀ HOT-SPOT ANALYSIS

Projects of Air Quality Concern

The first step in the hot-spot analysis is to determine whether a project meets the standard for a POAQC. The EPA specified in 40 CFR 93.123(b)(1) of the 2006 Final Rule that POAQC are certain highway and transit projects that involve significant levels of diesel vehicle traffic, or any other project that is identified in the PM_{2.5} and PM₁₀ State Implementation Plan (SIP) as a localized air quality concern. The 2006 Final Rule defines the POAQC that require a PM_{2.5} and PM₁₀ hot-spot analysis in 40 CFR 93.123(b)(1) as:

- i. New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

- ii. Projects affecting intersections that are at level of service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- iii. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- iv. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; or
- v. Projects in or affecting locations, areas, or categories of sites that are identified in the PM_{2.5} and PM₁₀ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The proposed MCP project would meet the criteria in Items i and ii above, as it would construct a new highway facility that would impact existing intersections. Therefore, this project is considered to be a POAQC, and a qualitative project-level PM_{2.5} and PM₁₀ hot-spot analysis has been conducted to assess whether the project would cause or contribute to any new localized PM_{2.5} or PM₁₀ violations, increase the frequency or severity of any existing violations, or delay timely attainment of the PM_{2.5} and PM₁₀ AAQS.

Types of Emissions Considered

In accordance with the EPA/FHWA Guidance, this hot-spot analysis is based only on directly emitted PM_{2.5} and PM₁₀ emissions. Tailpipe, brake wear, and tire wear PM_{2.5} and PM₁₀ emissions were considered in this hot-spot analysis.

Vehicles cause dust from paved and unpaved roads to be re-entrained, or resuspended, in the atmosphere. According to the 2006 Final Rule, road dust emissions are to be considered for PM₁₀ hot-spot analyses. For PM_{2.5}, road dust emissions are only to be considered in hot-spot analyses if the EPA or the State air agency has made a finding that such emissions are a significant contributor to the PM_{2.5} air quality problem (40 CFR 93.102(b)(3)). The EPA or the California Air Resources Board (ARB) has not yet made such a finding of significance; therefore, re-entrained PM_{2.5} is not considered in this analysis.

Secondary particles formed through PM_{2.5} and PM₁₀ precursor emissions from a transportation project take several hours to form in the atmosphere, giving emissions time to disperse beyond the immediate project area of concern for localized analyses; therefore, they were not considered in this hot-spot analysis. Secondary emissions of PM_{2.5} and PM₁₀ are considered as part of the regional emission analysis prepared for the conforming RTP and Federal Transportation Improvement Program (FTIP).

According to the project schedule, no phase of construction would last more than five years, and construction-related emissions may be considered temporary; therefore, any construction-related PM_{2.5} and PM₁₀ emissions due to this project were not included in this hot-spot analysis. This project will comply with the South Coast Air Quality Management District (SCAQMD) Fugitive Dust Rules for fugitive dust during construction of this project. Excavation, transportation, placement, and handling of excavated soils will result in no visible dust migration. A water truck or tank will be available within the project limits at all times to suppress and control the migration of fugitive dust from earthwork operations.

Analysis Method

According to hot-spot methodology, estimates of future localized PM_{2.5} pollutant concentrations need to be determined. This analysis makes those estimates by extrapolating present PM_{2.5} pollutant concentrations from air quality data measured at monitoring stations in the vicinity of the proposed project. The data from these stations are combined with projections from the 2003 Air Quality Management Plan (AQMP) prepared by the SCAQMD and examined for trends in order to predict future conditions in the project vicinity. Additionally, the impacts of the project and the likelihood of these impacts interacting with the ambient PM_{2.5} levels to cause hot spots are discussed.

Data Considered

The closest air monitoring stations to the project site are the Riverside-Rubidoux, Riverside-Magnolia, and the Perris Stations. Of these monitoring stations, Riverside-Rubidoux and Riverside-Magnolia monitor PM_{2.5} concentrations. The Riverside-Rubidoux and Perris Stations monitor PM₁₀ concentrations. These monitoring stations are located in Riverside County within the vicinity of SR-60, SR-91, and I-215. Therefore, the air quality concentrations monitored at this station are representative of the conditions within the project area.

Baseline PM_{2.5} Emissions. The monitored PM_{2.5} concentrations at the Riverside-Rubidoux and Riverside-Magnolia Stations are shown in Table B. These data show that the federal 24-hour PM_{2.5} AAQS (35 µg/m³) has been exceeded at these stations in each of the past six years. In addition, the annual average PM_{2.5} AAQS (15 µg/m³) at these stations was exceeded in all six years; however, the concentrations continue to diminish every year.

Table B: Ambient PM_{2.5} Monitoring Data (µg/m³)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|
| Riverside–Rubidoux Air Quality Monitoring Station | | | | | | |
| 3-year average 98th percentile | 74 | 66 | 77 | 60 | 58 | 54 |
| Exceeds federal 24-hour standard (35 µg/m ³)? | Yes | Yes | Yes | Yes | Yes | Yes |
| National annual average | 31.0 | 27.4 | 24.8 | 22.1 | 21.0 | 19.2 |
| Exceeds federal annual average standard (15 µg/m ³)? | Yes | Yes | Yes | Yes | Yes | Yes |
| Riverside–Magnolia Air Quality Monitoring Station | | | | | | |
| 3-year average 98th percentile | 66 | 64 | 56 | 54 | 41 | 48 |
| Exceeds federal 24-hour standard (35 µg/m ³)? | Yes | Yes | Yes | Yes | Yes | Yes |
| National annual average | 28.2 | 27.1 | 22.6 | 20.8 | 17.9 | 16.9 |
| Exceeds federal annual average standard (15 µg/m ³)? | Yes | Yes | Yes | Yes | Yes | Yes |

Source: EPA Web site: <http://www.epa.gov/air/data/monvals.html?st~CA~California>, May 2007.

While the current levels of PM_{2.5} in the project vicinity are generally above the federal 24-hour standard, indications are that levels in the future will continue to decrease. To estimate the future background PM_{2.5} concentrations, an exponential projection was made of the three-year 98th percentile levels (the 2003 AQMP does not have any projections for PM_{2.5} concentrations). The straight-line projection for the Riverside-Rubidoux and Riverside-Magnolia levels indicates that the PM_{2.5} concentration would be at the federal 24-hour PM_{2.5} standard of 35 µg/m³ in approximately 2009 and 2011, respectively. This trend is consistent with the ARB's plan to achieve attainment for PM_{2.5} by 2010. The Initial Attainment SIP submittal to the EPA is anticipated by April 2008.

Baseline PM₁₀ Emissions. The monitored PM₁₀ concentrations at the Riverside-Rubidoux and Perris Stations, shown in Table C, indicate that the federal 24-hour PM₁₀ AAQS (150 µg/m³) was not exceeded between 2001 and 2006.

Table C: Ambient PM₁₀ Monitoring Data (µg/m³)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|------|------|
| Riverside-Rubidoux Air Quality Monitoring Station | | | | | | |
| First Highest | 136 | 130 | 164 | 137 | 123 | 109 |
| Second Highest | 133 | 102 | 159 | 131 | 98 | 101 |
| Third Highest | 131 | 100 | 134 | 122 | 96 | 100 |
| Fourth Highest | 117 | 99 | 133 | 119 | 92 | 100 |
| No. of days above national 24-hour standard (150 µg/m ³) | 0 | 0 | 0 | 0 | 0 | 0 |
| Perris Air Quality Monitoring Station | | | | | | |
| First Highest | 86 | 100 | 142 | 83 | 80 | 125 |
| Second Highest | 79 | 79 | 116 | 79 | 70 | 101 |
| Third Highest | 78 | 76 | 116 | 72 | 69 | 88 |
| Fourth Highest | 77 | 72 | 80 | 69 | 66 | 80 |
| No. of days above national 24-hour standard (150 µg/m ³) | 0 | 0 | 0 | 0 | 0 | 0 |

Source: ARB Web site: <http://www.arb.ca.gov/adam/welcome.html>, July 2007.

While the current levels of PM₁₀ in the project vicinity are below federal standards, indications are that levels in the future will decrease even further. The draft 2007 AQMP (SCAQMD) reports that since the federal annual PM₁₀ standard has been revoked, the Basin is expected to be declared in attainment for the 24-hour federal PM₁₀ standard since 2000. Tables 2-23 and 2-25 on pages V-2-57 and V-2-58, respectively, in Appendix V of the approved 2003 AQMP show the projected maximum 24-hour average PM₁₀ concentrations for the Rubidoux area to be 150.0 and 137.1 µg/m³ for 2006 and 2010, respectively. This decrease in emissions in the future is largely due to continued improvements in emissions control technologies. To estimate what the background PM₁₀ concentration will be in 2035, a straight-line projection was made from the 2006 and 2010 values, predicting an ambient concentration of 56.5 µg/m³ for the 24-hour standard by 2035.

Transportation and Traffic Conditions

Existing and future (2035) no build average daily traffic (ADT) volumes, truck percentages, and average daily truck volumes for Cajalco Road and Ramona Expressway in the project area are shown in Table D. The traffic volumes along the local roads include 5 percent diesel trucks. The table indicates that Cajalco Road and Ramona Expressway currently experience fewer than 10,000 trucks annual average daily traffic (AADT).

Table D: Existing (2005) and No Build (2035) Average Daily Traffic Volumes (Truck Average Daily Volumes)

| Roadway Link | Existing (2005) | 2035 No Build |
|---|--------------------------|----------------|
| Cajalco Road from La Sierra Avenue to Lake Mathews Drive | 9,210 (461) ¹ | 17,700 (885) |
| Cajalco Road from Lake Mathews Drive to El Sobrante Road | 11,600 (580) | 14,300 (715) |
| Cajalco Road from El Sobrante Road to Wood Road | 14,890 (745) | 23,400 (1,170) |
| Cajalco Road from Wood Road to Alexander Street | 12,830 (642) | 23,400 (1,170) |
| Cajalco Road from Alexander Street to Clark Street | 13,870 (694) | 25,300 (1,265) |
| Cajalco Road from Clark Street to I-215 | 17,110 (856) | 45,900 (2,295) |
| Ramona Expressway from I-215 to Perris Boulevard | 24,500 (1,225) | 62,900 (3,145) |
| Ramona Expressway from Perris Boulevard to Evans Road | 20,460 (1,023) | 37,200 (1,860) |
| Ramona Expressway from Evans Road to Bernasconi Road | 16,190 (810) | 32,900 (1,645) |
| Ramona Expressway from Bernasconi Road to Reservoir Avenue | 13,660 (683) | 33,200 (1,660) |
| Ramona Expressway from Reservoir Avenue to Town Center Boulevard | 11,310 (566) | 32,800 (1,640) |
| Ramona Expressway from Town Center Boulevard to Park Center Boulevard | 10,430 (523) | 34,500 (1,725) |
| Ramona Expressway from Park Center Boulevard to Warren Road | 10,030 (502) | 29,000 (1,450) |
| Ramona Expressway from Warren Road to SR-79 | 12,660 (633) | 28,500 (1,425) |

Source: VRPA, July 2007.

Traffic Changes Due to the Proposed Project

The proposed project is a new roadway construction project. Based on the Mid County Parkway Traffic Technical Report (VRPA, July 2007), the proposed project would increase the traffic volumes along Cajalco Road and Ramona Expressway. However, the traffic volumes along MCP would not exceed the 125,000 ADT threshold for a POAQC. In addition, the total truck average daily trips would remain below the 10,000-vehicle threshold for POAQC. The future traffic volumes along MCP for each of the build alternatives are shown in Table E.

¹ Truck ADT calculated using projected truck percentage of 5 percent.

Table E: 2035 Project Alternative Average Daily Traffic Volumes (Truck Average Daily Volumes)

| Roadway Link | Alternative 4 Traffic Volumes | Alternative 5 Traffic Volumes | Alternative 6 Traffic Volumes | Alternative 7 Traffic Volumes | Alternative 9 Traffic Volumes |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| MCP from Cajalco Connector to Lake Mathews Drive | 61,400 (3,070) ¹ | 61,000 (3,050) | 50,600 (2,530) | 50,600 (2,530) | 55,000 (2,750) |
| MCP from Lake Mathews Drive to El Sobrante Road | 60,600 (3,030) | 60,000 (3,000) | 50,000 (2,500) | 49,600 (2,480) | 52,200 (2,610) ² |
| MCP from El Sobrante Road to Wood Road | 72,400 (3,620) | 72,000 (3,600) | 64,600 (3,230) | 64,000 (3,200) | 66,600 (3,330) ³ |
| MCP from Wood Road to Alexander Street | 73,600 (3,680) | 73,400 (3,670) | 67,200 (3,360) | 66,600 (3,330) | 66,600 (3,330) ³ |
| MCP from Alexander Street to Clark Street | 76,200 (3,810) | 75,200 (3,760) | 70,000 (3,500) | 69,400 (3,470) | 66,600 (3,330) ³ |
| MCP from Clark Street to I-215 | 77,200 (3,860) | 76,400 (3,820) | 72,600 (3,630) | 73,000 (3,650) | 66,600 (3,330) ³ |
| MCP from I-215 to Perris Boulevard | 104,000 (5,200) | 102,000 (5,100) | 100,400 (5,020) | 99,400 (4,970) | 86,600 (4,330) ⁴ |
| MCP from Perris Boulevard to Evans Road | 76,000 (3,800) | 72,800 (3,640) | 71,200 (3,560) | 70,200 (3,510) | 69,800 (3,490) |
| MCP from Evans Road to Ramona Expressway | 73,000 (3,650) | 71,800 (3,590) | 70,000 (3,500) | 69,400 (3,470) | 68,800 (3,440) |
| MCP from Ramona Expressway to Bernasconi Road | 73,600 (3,680) | 72,000 (3,600) | 72,000 (3,600) | 71,400 (3,570) | 69,800 (3,490) |
| MCP from Bernasconi Road to Reservoir Avenue | 74,000 (3,700) | 73,000 (3,650) | 68,800 (3,440) | 68,200 (3,410) | 70,000 (3,500) |
| MCP from Reservoir Avenue to 5th Street | 71,600 (3,580) | 69,600 (3,480) | 64,200 (3,210) | 63,600 (3,180) | 66,000 (3,300) |
| MCP from 5th Street to Park Center Boulevard | 76,600 (3,830) | 75,200 (3,760) | 69,200 (3,460) | 69,200 (3,460) | 72,400 (3,620) |
| MCP from Park Center Boulevard to Warren Road | 68,800 (3,440) | 67,200 (3,360) | 64,800 (3,240) | 64,000 (3,200) | 64,400 (3,220) |
| MCP from Warren Road to SR-79 | 63,000 (3,150) | 62,000 (3,100) | 58,200 (2,910) | 57,400 (2,870) | 59,200 (2,960) |

Source: VRPA, July 2007.

¹ Truck ADT calculated using projected truck percentage of 5 percent.² Mid County Parkway between Lake Mathews Drive and Old Elsinore Road.³ Mid County Parkway between Old Elsinore Road and I-215 is a limited access road.⁴ Traffic analysis of the Mid County Parkway main line for Alternative 9 between I-215 and Perris Boulevard excludes traffic to and from I-215.

Tables F and F show the 2035 No Build/No Action and 2035 No Build/County General Plan levels of service (LOS) and delay in the project area for the a.m. and p.m. peak hours. Tables G, H, I, J, K and L show the 2035 LOS and delay in the project area for Build Alternatives 4, 5, 6, 7, and 9, respectively. As shown, the proposed project would improve the LOS and reduce the delay the intersections within the project area.

Table F: 2035 No Project/No Action Intersection Levels of Service

| Intersection | | AM Peak Hour | | PM Peak Hour | |
|--------------|---|--------------|-----|--------------|-----|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1. | Cajalco Road/Temescal Canyon Road | 43.7 | D | 57.6 | E |
| 2. | Cajalco Road/Lake Mathews Drive | > 80 | F | 56.1 | E |
| 3. | Cajalco Road/El Sobrante Road | > 80 | F | 26.7 | C |
| 4. | Cajalco Road/Wood Road | 62.7 | E | > 80 | F |
| 5. | Cajalco Road/Clark Street | 45.1 | D | > 80 | F |
| 6. | Ramona Expressway/Perris Boulevard | > 80 | F | > 80 | F |
| 7. | Ramona Expressway/Evans Road | 60.7 | E | 58.7 | E |
| 8. | Ramona Expressway/Park Center Boulevard | > 80 | F | > 80 | F |
| 9. | Ramona Expressway/Warren Road | > 80 | F | > 80 | F |

Notes:

LOS = Level of Service

Table G: 2035 No Project/County General Plan Intersection Levels of Service

| Intersection | | AM Peak Hour | | PM Peak Hour | |
|--------------|---|--------------|-----|--------------|-----|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1. | Cajalco Road/Temescal Canyon Road | 43.7 | D | 57.6 | E |
| 2. | Cajalco Road/Lake Mathews Drive | 24.2 | C | 15.7 | B |
| 3. | Cajalco Road/El Sobrante Road | 37.0 | D | 17.1 | B |
| 4. | Cajalco Road/Wood Road | 30.8 | C | 28.9 | C |
| 5. | Cajalco Road/Clark Street | 21.5 | C | 28.3 | C |
| 6. | Ramona Expressway/Perris Boulevard | > 80 | F | > 80 | F |
| 7. | Ramona Expressway/Evans Road | 46.7 | D | 45.8 | D |
| 8. | Ramona Expressway/Park Center Boulevard | 45.1 | D | > 80 | F |
| 9. | Ramona Expressway/Warren Road | > 80 | F | > 80 | F |

Notes:

LOS = Level of Service

Table H: 2035 Alternative 4 Intersection Levels of Service

| Intersection | | AM Peak Hour | | PM Peak Hour | |
|--------------|------------------------------------|--------------|-----|--------------|-----|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1. | Cajalco Road/Temescal Canyon Road | 31.0 | C | 33.3 | C |
| 2. | MCP/Lake Mathews Drive WB Ramps | 26.9 | C | 24.1 | C |
| 3. | MCP/Lake Mathews Drive EB Ramps | 14.4 | B | 29.4 | C |
| 4. | MCP/El Sobrante Road WB Ramps | 23.5 | C | 22.8 | C |
| 5. | MCP/El Sobrante Road EB Ramps | 47.6 | D | 24.2 | C |
| 6. | MCP/Wood Road WB Ramps | 8.1 | A | 8.4 | A |
| 7. | MCP/Wood Road EB Ramps | 10.2 | B | 10.7 | B |
| 8. | MCP/Clark Street WB Ramps | 3.8 | A | 5.2 | A |
| 9. | MCP/Clark Street EB Ramps | 12.1 | B | 16.4 | B |
| 10. | MCP/Perris Boulevard WB Ramps | 7.3 | A | 6.4 | A |
| 11. | MCP/Perris Boulevard EB Ramps | 10.7 | B | 12.8 | B |
| 12. | MCP/Evans Road WB Ramps | 4.5 | A | 9.2 | A |
| 13. | MCP/Evans Road EB Ramps | 7.2 | A | 8.8 | A |
| 14. | MCP/Ramona Expressway WB Ramps | 2.7 | A | 2.3 | A |
| 15. | MCP/Ramona Expressway EB Ramps | 4.8 | A | 6.6 | A |
| 16. | MCP/Park Center Boulevard WB Ramps | 13.4 | B | 10.9 | B |
| 17. | MCP/Park Center Boulevard EB Ramps | 10.9 | B | 18.9 | B |
| 18. | MCP/Warren Road WB Ramps | 7.7 | A | 7.9 | A |
| 19. | MCP/Warren Road EB Ramps | 9.7 | A | 12.5 | B |

Source: VRPA, July 2007.

Notes:

LOS = Level of Service

Table I: 2035 Alternative 5 Intersection Levels of Service

| Intersection | | AM Peak Hour | | PM Peak Hour | |
|--------------|------------------------------------|--------------|-----|--------------|-----|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1. | Cajalco Road/Temescal Canyon Road | 31.0 | C | 33.3 | C |
| 2. | MCP/Lake Mathews Drive WB Ramps | 24.8 | C | 21.6 | C |
| 3. | MCP/Lake Mathews Drive EB Ramps | 12.1 | B | 20.5 | C |
| 4. | MCP/El Sobrante Road WB Ramps | 23.7 | C | 25.3 | C |
| 5. | MCP/El Sobrante Road EB Ramps | 44.2 | D | 24.2 | C |
| 6. | MCP/Wood Road WB Ramps | 8.7 | A | 12.0 | B |
| 7. | MCP/Wood Road EB Ramps | 11.2 | B | 10.0 | B |
| 8. | MCP/Clark Street WB Ramps | 4.4 | A | 5.9 | A |
| 9. | MCP/Clark Street EB Ramps | 11.8 | B | 21.4 | C |
| 10. | MCP/Perris Boulevard WB Ramps | 15.1 | B | 17.7 | B |
| 11. | MCP/Perris Boulevard EB Ramps | 17.1 | B | 22.8 | C |
| 12. | MCP/Evans Road WB Ramps | 5.4 | A | 6.7 | A |
| 13. | MCP/Evans Road EB Ramps | 8.0 | A | 9.6 | A |
| 14. | MCP/Ramona Expressway WB Ramps | 2.2 | A | 2.6 | A |
| 15. | MCP/Ramona Expressway EB Ramps | 1.5 | A | 1.7 | A |
| 16. | MCP/Park Center Boulevard WB Ramps | 12.8 | B | 12.1 | B |
| 17. | MCP/Park Center Boulevard EB Ramps | 12.1 | B | 22.3 | C |
| 18. | MCP/Warren Road WB Ramps | 8.4 | A | 9.5 | A |
| 19. | MCP/Warren Road EB Ramps | 8.8 | A | 17.0 | B |

Source: VRPA, July 2007.

Notes:

LOS = Level of Service

Table J: 2035 Alternative 6 Intersection Levels of Service

| Intersection | | AM Peak Hour | | PM Peak Hour | |
|--------------|------------------------------------|--------------|-----|--------------|-----|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1. | Cajalco Road/Temescal Canyon Road | 34.6 | C | 42.3 | D |
| 2. | MCP/Lake Mathews Drive WB Ramps | 22.1 | C | 28.2 | C |
| 3. | MCP/Lake Mathews Drive EB Ramps | 12.1 | B | 40.2 | D |
| 4. | MCP/El Sobrante Road WB Ramps | 21.2 | C | 29.8 | C |
| 5. | MCP/El Sobrante Road EB Ramps | 26.3 | C | 9.3 | A |
| 6. | MCP/Wood Road WB Ramps | 9.3 | A | 19.0 | B |
| 7. | MCP/Wood Road EB Ramps | 10.3 | B | 12.7 | B |
| 8. | MCP/Clark Street WB Ramps | 4.1 | A | 5.1 | A |
| 9. | MCP/Clark Street EB Ramps | 12.4 | B | 16.5 | B |
| 10. | MCP/Perris Boulevard WB Ramps | 8.1 | A | 5.1 | A |
| 11. | MCP/Perris Boulevard EB Ramps | 11.7 | B | 14.8 | B |
| 12. | MCP/Evans Road WB Ramps | 4.7 | A | 5.6 | A |
| 13. | MCP/Evans Road EB Ramps | 6.9 | A | 6.3 | A |
| 14. | MCP/Ramona Expressway WB Ramps | 3.1 | A | 2.9 | A |
| 15. | MCP/Ramona Expressway EB Ramps | 1.4 | A | 2.5 | A |
| 16. | MCP/Park Center Boulevard WB Ramps | 12.6 | B | 11.2 | B |
| 17. | MCP/Park Center Boulevard EB Ramps | 8.5 | A | 13.8 | B |
| 18. | MCP/Warren Road WB Ramps | 6.3 | A | 6.8 | A |
| 19. | MCP/Warren Road EB Ramps | 8.2 | A | 11.5 | B |

Source: VRPA, July 2007.

Notes:

LOS = Level of Service

Table K: 2035 Alternative 7 Intersection Levels of Service

| Intersection | | AM Peak Hour | | PM Peak Hour | |
|--------------|------------------------------------|--------------|-----|--------------|-----|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1. | Cajalco Road/Temescal Canyon Road | 34.6 | C | 42.3 | D |
| 2. | MCP/Lake Mathews Drive WB Ramps | 26.9 | C | 23.8 | C |
| 3. | MCP/Lake Mathews Drive EB Ramps | 13.2 | B | 27.1 | C |
| 4. | MCP/El Sobrante Road WB Ramps | 37.1 | D | 37.1 | D |
| 5. | MCP/El Sobrante Road EB Ramps | 26.9 | C | 15.7 | B |
| 6. | MCP/Wood Road WB Ramps | 15.5 | B | 21.6 | C |
| 7. | MCP/Wood Road EB Ramps | 14.2 | B | 13.3 | B |
| 8. | MCP/Clark Street WB Ramps | 10.3 | B | 12.0 | B |
| 9. | MCP/Clark Street EB Ramps | 15.4 | B | 20.1 | C |
| 10. | MCP/Perris Boulevard WB Ramps | 13.8 | B | 21.2 | C |
| 11. | MCP/Perris Boulevard EB Ramps | 16.6 | B | 22.3 | C |
| 12. | MCP/Evans Road WB Ramps | 5.8 | A | 6.2 | A |
| 13. | MCP/Evans Road EB Ramps | 6.7 | A | 5.7 | A |
| 14. | MCP/Ramona Expressway WB Ramps | 3.8 | A | 2.6 | A |
| 15. | MCP/Ramona Expressway EB Ramps | 5.9 | A | 8.1 | A |
| 16. | MCP/Park Center Boulevard WB Ramps | 18.4 | B | 15.8 | B |
| 17. | MCP/Park Center Boulevard EB Ramps | 13.8 | B | 17.1 | B |
| 18. | MCP/Warren Road WB Ramps | 11.6 | B | 12.6 | B |
| 19. | MCP/Warren Road EB Ramps | 15.0 | B | 19.1 | B |

Source: VRPA, July 2007.

Notes:

LOS = Level of Service

Table L: 2035 Alternative 9 Intersection Levels of Service

| Intersection | | AM Peak Hour | | PM Peak Hour | |
|--------------|------------------------------------|--------------|-----|--------------|-----|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1. | Cajalco Road/Temescal Canyon Road | 31.0 | C | 33.3 | C |
| 2. | MCP/Lake Mathews Drive WB Ramps | 28.0 | C | 25.0 | C |
| 3. | MCP/Lake Mathews Drive EB Ramps | 13.9 | B | 23.4 | C |
| 4. | MCP/Old Elsinore Road WB Ramps | 11.9 | B | 13.1 | B |
| 5. | MCP/Old Elsinore Road EB Ramps | 12.3 | B | 38.1 | D |
| 6. | MCP/Perris Boulevard Ramps | 20.7 | C | 21.6 | C |
| 7. | MCP/Evans Road WB Ramps | 9.0 | A | 8.9 | A |
| 8. | MCP/Evans Road EB Ramps | 6.8 | A | 7.4 | A |
| 9. | MCP/Ramona Expressway WB Ramps | 2.2 | A | 2.3 | A |
| 10. | MCP/Ramona Expressway EB Ramps | 3.7 | A | 6.2 | A |
| 11. | MCP/Park Center Boulevard WB Ramps | 12.6 | B | 10.2 | B |
| 12. | MCP/Park Center Boulevard EB Ramps | 12.0 | B | 18.5 | B |
| 13. | MCP/Warren Road WB Ramps | 7.7 | A | 8.3 | A |
| 14. | MCP/Warren Road EB Ramps | 12.2 | B | 12.7 | B |

Source: VRPA, July 2007.

Notes:

LOS = Level of Service

CONCLUSION

Transportation conformity is required under Section 176(c) of the CAA to ensure that federally supported highway and transit project activities are consistent with the purpose of the SIP. Conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant AAQS. As required by the 2006 Final Rule, this qualitative PM_{2.5} and PM₁₀ hot-spot analysis demonstrates that this project meets the CAA conformity requirements to support State and local air quality goals with respect to potential localized air quality impacts.

It is not expected that changes to PM_{2.5} and PM₁₀ emissions levels associated with the proposed project would result in new violations of the federal air quality standards for the following reasons:

- The future truck traffic volumes along MCP would not exceed 10,000 ADT.
- The ambient PM₁₀ concentrations have not exceeded the 24-hour or annual federal standard within the past six years.
- Based on the projected PM₁₀ concentrations listed in the 2003 AQMP, the 24-hour PM₁₀ concentrations would be 38 percent of the federal standards by 2035.
- Based on the local monitoring data, the annual average PM_{2.5} concentrations within the project area would be reduced to below the federal standard by 2011.
- By 2035 the intersections within the proposed project area will be operating during the p.m. peak hour at LOS C through F without improvements. The proposed build alternatives would improve the LOS to A through D.

For these reasons, future new or worsened PM_{2.5} and PM₁₀ violations of any standards are not anticipated; therefore, the project meets the conformity hot-spot requirements in 40 CFR 93-116 and 93-123 for both PM_{2.5} and PM₁₀.

REFERENCES

United States Environmental Protection Agency (EPA). 2006a. "Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas" (EPA 420-B-06-902, March 2006).

United States Environmental Protection Agency (EPA). 2006b. Final Revisions to the National Ambient Air Quality Standards for Particulate Pollution (Particulate Matter). EPA Web site: www.epa.gov/oar/particulatepollution/naaqsrev2006.html, accessed on March 19, 2007.

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